Remarks

Claims 7-10 are pending in this application after entry of this amendment. Claims 7-10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over McKee, Ipcinski or Park in view of Muirhead, Wood or Ikrath. Applicants believe that there is no suggestion or motivation to modify the references to achieve the claimed invention. Further, the proposed modifications to the references change the principles of operation of the references. Accordingly, there is no suggestion or motivation to modify the references, and such modification is improper because the proposed modifications change the principle of operation of the references. The Examiner states that to use the specific generator of McKee, Ipcinski or Park for use as a self-contained wireless transmitter would have been obvious to one of ordinary skill in the art. This statement by the Examiner does not point out any teaching, suggestion, or motivation in the references to make the proposed combination. Further, applicants provide additional explanation as to why there is no motivation or suggestion to modify the references and why such modification is improper.

Applicants have amended claim 7 to more particularly point out that the piezoelectric element is arranged to be directly distressed by direct contacting of the Belleville washer. Upon actuation of the switch by a user, a single snap action of the Belleville washer is caused so as to produce power for operation of the wireless transmitter. Applicants respectfully request that the Examiner enter this amendment. Support for the amendment may be found, for example, in Figure 3 and in the specification at page 5, line 24 - page 6, line 3.

Regarding Muirhead, this patent describes a radio frequency device for marking munition impact point. The transmitter activates on impact of the munition. Because the transmitter activates on impact of the munition, there is no motivation to provide a switch including a Belleville washer that distresses the piezoelectric element when manually actuated. Manual activation of a switch including a Belleville washer is clearly undesirable in a munition that is designed to transmit upon impact with a target.

The Examiner states that Muirhead would benefit from the Belleville washer actuator as it would provide a threshold force required for activation as well as a predictable voltage output to the ignitor. Applicants point out that the Examiner has misinterpreted Muirhead, and the piezoelectric element in Muirhead does not provide a voltage output to the ignitor but provides output to activate a transmitter on impact of the munition. Accordingly, the Examiner has failed to provide a suggestion or motivation to modify Muirhead to achieve the claimed invention.

Regarding Ikrath, this patent describes a mechanically actuated radio transmitter. Mechanical spring 7 continues to vibrate and continues to strike the crystal after the initial hammer blow. Col. 2, ll. 6-28. There is no motivation to substitute a switch including a Belleville washer that upon manual actuation strikes the crystal a single time. Further, making such a modification would change the principle of operation of Ikrath in that the principle of operation of Ikrath requires mechanically vibrating spring element 7. Further, amended claim 7 specifically recites that the piezoelectric element is arranged to be directly distressed by direct contacting by the Belleville washer upon actuation of the switch by a user causing a single snap action of the Belleville washer. The Examiner states that using a Belleville snap activator with its aforementioned known advantages would not change the ringing action provided by spring 7. Applicants point out that claim 7 recites that the piezoelectric element is arranged to be directly distressed by direct contacting by the Belleville washer. Accordingly, the modification proposed by the Examiner would change the ringing action provided by spring 7 and would change the principle of operation of Ikrath.

Regarding Wood, this patent describes a transmitter power supply for oscillators. Arm 28 is constructed of resilient material such as spring steel such that arm 28 vibrates and causes crystal 16 to generate voltages which appear as alternating charges (as arm 28 continues to vibrate). There is no motivation to provide such a switch including a Belleville washer that upon actuation provides a single impact to the crystal. Further, such modification changes the principle of operation of Wood in that Wood requires arm 28 to vibrate.

The Examiner states that arm 28 would still operate as a vibrator if the activation was provided by a Belleville washer. Applicants point out that claim 7 recites that the piezoelectric element is arranged to be distressed directly by direct contacting by the Belleville washer upon actuation of the switch by a user to cause a single snap action of the Belleville washer. As such, the proposed modification would change the principle of operation of Wood.

In summary, applicants have amended claim 7 to more particularly point out that the piezoelectric element is arranged to be distressed directly by direct contacting by the Belleville washer upon actuation of the switch by a user causing a single snap action of the Belleville washer so as to produce power for operation of the wireless transmitter. Applicants respectfully request that the Examiner enter this amendment. Further, applicants believe the Examiner has failed to provide a suggestion or motivation to modify the references to achieve the claimed invention, and that there is no suggestion or motivation to modify the references. Further, applicants gave reasons why it is improper to modify Muirhead, Wood or Ikrath because the proposed modifications change the principle of operation of Muirhead, Wood or Ikrath. Regarding Muirhead, Muirhead describes a munition and manual activation by a user of a piezoelectric element is quite contrary to the principle of operation of Muirhead. Regarding Ikrath, the principle of operation of Ikrath requires mechanically vibrating spring element 7. Regarding Wood, the principle of operation of Wood requires arm 28 to vibrate. Independent claim 7 specifically recites, in combination with other elements, a piezoelectric element arranged to be directly distressed by direct contacting with a Belleville washer upon actuation of the switch by a user. For the reasons given above, independent claim 7 is believed to be patentable over the cited prior art.

Claims 8-10 are believed to be patentable for the dependency upon claim 7. In addition, the Examiner has failed to point out any specific teaching of the features recited by dependent claims 8 and 11 which are believed to recite additional patentable subject matter.

Applicants respectfully request that the Examiner enter the amendment and allow pending claims 7-10.

Respectfully submitted,

H. Winston Maue et al.

By _____
Jeremy J. Curcuri
Reg. No. 42,454
Attorney for Applicants

Date: May 20, 2002

BROOKS & KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075
Phone: 248-358-4400
Fax: 248-358-3351

Attachment

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please replace claim 7 as shown below.

7. (Amended) A self-powered wireless switch comprising:
a wireless transmitter;
a switch including a Belleville washer; and
a piezoelectric element arranged to be directly distressed by direct contacting by the Belleville washer upon actuation of the switch by a user causing a single snap action of the Belleville washer so as to produce power for operation of the wireless transmitter.